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## PATENT ABSTRACTS OF JAPAN

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(71)Applicant : HITACHI CONSTR MACH CO  
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## (54) ULTRASONIC PROBE

## (57)Abstract:

PURPOSE: To facilitate the sound field calculation and to improve the performance by forming the planar dimensions of the upper electrode and the lower electrode to become larger than a piezoelectric element, and also, to become almost the same diameter.

CONSTITUTION: Between the upper electrode 8 and the lower electrode 6 of the part in which a piezoelectric element 7 is not interposed, an insulating layer 11 consisting of SiO<sub>2</sub>, etc., is interposed, and insulated electrically. Also, planar dimensions of the electrode 8 and the electrode 6 are formed so as to become larger the element 7, and also, the become almost the same diameter to each other. Accordingly, it can be estimated that the planar dimensions of these electrodes 6, 8 and element 7 are almost the same, and in the case a voltage is applied between the electrodes 6, 8, the estimation of dimensions of a sound source for generating actually an ultrasonic wave is facilitated. In such a way, a calculation of a

